



*Occultations of Stars by the Moon*

June	Star	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	°
30 ...	13 Capricorni...	6 ...	0 0 ...	1 7 ...	119 239
30 ...	14 Capricorni...	5 ...	1 36 ...	2 22 ...	158 233
July					
2 ...	B.A.C. 7774...	6 ...	2 37 ...	3 59 ...	99 302

*Phenomena of Jupiter's Satellites*

June	h. m.	July	h. m.
29 ...	20 26 I. tr. ing.	2 ...	22 35 III. occ. reap.
	22 46 I. tr. egr.	3 ...	20 28 IV. ecl. reap.
30 ...	20 56 I. ecl. reap.		

The Occultations of Stars and Phenomena of Jupiter's Satellites are such as are visible at Greenwich.

July 3, 23h.—Sun at greatest distance from the Earth, the distance being one-sixtieth part greater than the mean distance.

*GEOGRAPHICAL NOTES*

THE Royal Geographical Society have decided to send out another African expedition. This time the region to be explored is one of more than usual interest, and the method of procedure will be considerably different from that which has been hitherto usually followed. We have had many lines run through Africa in all directions, and what is now needed is the leisurely study of the continent in detail. This is what will be done by the expedition which will leave England in August next, under Mr. J. T. Last, who, as a lay agent of the Church Missionary Society, has done admirable work in the Zanzibar interior. Mr. Last, after making up his caravan at Zanzibar, will proceed south to Lindi, to the north of the mouth of the Rovuma River. Thence he will proceed to the confluence of the Rovuma and Lutende Rivers, and fix the longitude of the junction—an important geographical point not yet settled. He will then go on in a generally south-westerly direction, and, before reaching the north end of Lake Shirwa, turn southwards and make for the Namulli Hills, which, with other new features in this region, were discovered by Consul O'Neill in the end of 1883. Here Mr. Last will establish himself and make a detailed study of the whole region in all its aspects. He will make a complete survey of the surrounding country, its topography, its people, its botany, economic products, climate, and languages. When this is completed Mr. Last will enter the valley of the Likugu River, which rises in the neighbourhood of these hills, and follow it down to the coast of Quizungu, whence he will travel south to Quilimane or north to Angoche, and thence to Mozambique. Mr. Last will make a special point of collecting all possible information concerning the country he passes through, its changes; its people, their customs, languages, &c.; the climate, its sanitary conditions, and its suitability for the introduction of European and other economic plants.

THE last number of Petermann's *Mittheilungen* contains the conclusion of Herr Schunke's account of Kaffraria and the eastern borderlands of Cape Colony; the Panama Canal, with a map, by the Editor; the German possessions on the Slave coast, also with a map, by Herr Langhans; the latest explorations in Costa Rica, by Dr. Polakowsky. This last is specially interesting. It is a continuation of a paper, published two years ago, and describes ten additional journeys to various parts of Costa Rica by Dr. Thiel the bishop. It is unfortunate for science that this ecclesiastic, whose energy in educating his flock and whose thirst for scientific investigation are alike remarkable, should have been expelled by the Costa Rican Government, and that in such haste that he was compelled to leave behind him all his journals, collections, scientific observations, &c. He travelled and lived much amongst the various tribes of Indians, and studied their dialects, the antiquities, and ethnology of the country. He is at present visiting the eastern coasts of Nicaragua and Honduras in order to collect Indian antiquities and the remnants of Indian languages. The same paper also contains a report of a journey in Costa Rica by Padre Fernandez.

A CORRESPONDENT writes to *Ausland* from Santiago to correct a mistake as to a reported discovery of a glacier in Chile. The glacier in question is called the Ada glacier, and occupies the upper end of the Cajon de los Cipreses, a branch of the valley of Cachapual. In a note which appeared in the fourth

number of *Ausland* this year and was copied from the *Proceedings* of the Royal Geographical Society, the discovery of this glacier was attributed to Dr. Güssfeldt. Some years previously the same discovery had been ascribed to Mr. Charles Wiener. The fact is, the correspondent states, the glacier has been known to the visitors to the baths of Cauques for the last twenty years at least. MM. Wiener and Güssfeldt, like other visitors to the baths, had had their attention called to it, and each in turn was consequently credited with its discovery.

THE French Minister of Public Instruction has published a report which he has received from M. Chaffanjon, a professor in Guadeloupe, giving an account of his mission on the Orinoco. In order to investigate fully the hydrography of the river he has often found it necessary to travel far away from the banks on both sides, and he has thus been able to survey the former beds. He has also obtained the materials for a geological map of the region and for a description of the phenomena attending the formation of this part of the earth's crust. Hitherto we have had only vague ideas respecting the Indian races, because they were without history or ancient remains. Prof. Chaffanjon has discovered in five different places inscriptions and pictures in granite, which he has carefully copied. He has collected a crowd of ethnological objects amongst the Caribs, the Panaias, and the Mapoyes. He hopes also to be able to fill certain gaps in the zoological and botanical collections in the Paris Museum. The report is accompanied by a sketch on a scale of 1 to 660,000 of the course of the Orinoco between Caicara and Ciudad Bolivar, which gives a considerable number of names new to geography.

THE Berlin Geographical Society has decided to erect a monument at the burial place of the late Dr. Nachtigal, at Cape Palmas, and all Germans are invited to send contributions to the fund for this purpose.

*ELECTRICAL DEFINITIONS, NOMENCLATURE, AND NOTATION<sup>1</sup>*

WITH the rapid progress that has lately been made in electrical science and its applications, there has sprung up a new and fast-increasing class of practical electricians. These, partly from necessity and partly from well-meant respect, have adopted and applied the old terms and expressions which appeared suitable to their predecessors, as well as coined not a few new ones, until now their vocabulary is in considerable confusion, and, as all must admit, requires sifting and reform.

Nothing is more tantalising and perplexing than the different modes of expression and symbols used by different authors, and sometimes by the same author, to explain and interpret one and the same thing or result. All this might be avoided if an international system of definitions, nomenclature, and notation was agreed upon and legalised. The rapidity with which the new definitions of the ohm, ampere, and volt (issued and legalised last spring at Paris by the International Congress of Electricians) were universally adopted, shows this. These definitions should be still further extended to other electrical units. They should embrace a suitable system of notation, whereby electrician could represent in symbols and letters, terms, expressions, and formulæ of common occurrence, in a similar manner to that adopted by chemists in connection with chemical elements and their combinations. Last session the author promised a communication to the Society on this subject, and, being again reminded by the Secretary of his unfulfilled promise, he now submits a few of the more apparent instances where ambiguity or want of uniformity exists, with suggestions, in the hope that a discussion may follow, and that a Committee of this Society may be formed to consider and draw up a series of definitions, nomenclature, and notation that would be generally acceptable. The proposed Committee might then confer with the French Committee, also with a similar Committee appointed by the British Association, and, finally, this important question should be referred to the International Congress of Electricians, in order that they may legalise and issue their decisions in a similar manner to that adopted by them in the case of the ohm, the ampere, and the volt. Undoubtedly, if such a course were adopted, most beneficial results would accrue to all concerned.

Paper read before the Society of Telegraph Engineers and Electricians on May 14, 1885, by Prof. Andrew Jamieson, C.E., F.R.S.E., Member, Principal, College of Science and Arts, Glasgow.